User Manual

（AT-12L GPS Tracker)
Vehicle/Motorcycle Model

Table of Contents

Introduction 4

Applications 4

Caution 4

Technical Specification 5

Key Features: 5

Specification 6

Installation 7

Package: 7

Wiring Diagram 10

LED Status 11

Quick start guideline 12

Tracking by SMS: 12

Tracking by GPRS on Web 13

Setting in SMS mode 14

Controller phone number 14

Switch tracker to SMS Mode 14

Change user password 14

Power management 15

ON the GPS 15

OFF GPS 15

Power-saving mode 15

Request location by SMS - show longitude and latitude 16

Request location by SMS - show Google map URL link 17

Timer for SMS tracking 18

Activate timer tracking 18

Stop timer tracking 18

Raise alert my SMS or phone call 18
Report by SMS 18
Report by voice call and SMS 18
Request location by voice call 19
SOS button（Panic button) 19
Setup Geo-fence area 19
Battery low voltage alert..... 20
Immobilizer..... 20
Immobilize vehicle 20
Recover mobilization 21
Alert while power source being cuted off 21
Raise Alarm while power source being cut off 21
Keep silent while power source being cut off 21
Tow alarm 21
Activate tow alarm 21
Cancel tow alarm 22
Alert while engine ON or OFF..... 22
Activate engine ON or OFF alert 22
Stop engine ON or OFF alert..... 22
Super electricity-saving mod..... 25
GPRS Mode 23
Switch to GPRS mode 23
Set up the access point name (APN) 23
Set up TCP/IP server IP address and port number 23
Start upload the location by GPRS 24
Data upload Interval 24
Data upload interval while ACC ON: 24
Upload interval while ACC Off: 24
Super electricity-saving mod..... 25
Data logger 25
Activate data logger function 25
Upload data to server 25

Upgrade device by GPRS..... 25
Appendix: Command List..... 26

Introduction

The AT-12L GPS/GSM Tracker is a vehicle remote positioning device with built-in GPS and GSM/GPRS technology in compact size. It can transmit the longitude and latitude coordinates to your cell phone by the SMS. User could use the coordinates to find its location on the Google maps or other map software. The tracker also uploads position data to a designated server through GPRS. User can look for real-time location-tracking and historical track through the our web base server.

Applications

AT-12L GPS/GSM vehicle tracker mainly used on car, motorcycle, scooter and boat. The device built in GPS antenna, install at clear sky view place only. Do not apply to conceal installation.

Caution

Please read this handbook carefully before use the tracker

The picture in this user manual may be different with the real products. Please consult our representative for detail of engineering change

Technical Specification

Key Features:

Built-in SIRF Star III/ JRC Chipset, excellent for fixing the position even at a weak signal status. Work well under limited bad weather condition.

Built-in GSM/GPRS module, support Dual or Quad band GSM 900/1800 MHz (850/1900 Optional)

Raise alert by SMS and phone call

Get the position information via mobile phone SMS, log on to server for tracking via GPRS

Raise alert through SOS button, send out exact location for immediate rescue/action.

Portable, compact size. Low power Consumption, automatically turn off GPS once the car in static mode for 5 minutes.

Immobilize vehicle

Geofence fence.

Built in battery, work another 5 hours if external power being cut off

Auto detect ACC, stop battery charge while vehicle off. Increase your vehicle battery life

Tow alarm

Data logger function

Engine start up and stoppage alert

Upgrade latest firmware by wireless

Track by SMS with Goggle map URL link

Super Long Battery above 110 hours

Specification

GSM module	MTK program, GSM 900/1800/850/1900 dual-band or quad-band Support the TCP protocol
GPS Chipset	U-BLOX high sensitive chipset
GPS sensitivity	-164dB
C/A Code	1.023MHz chip rate
Channels	210 channel all-in-view tracking
GPS frequency	L1,1575.42MHz
GPS Position Accuracy	2.5 meters,CEP
Velocity Accuracy	0.1m/s
Time Accuracy	Synchronized to GPS time
Default datum	WGS-84
Hot start	1sec.,average
Warm start	30 sec.,average
Cold Start	35 sec, average
Altitude Limit	18,000 meters (60,000feet) max.

Operating temperature	-20℃－65℃
Humidity	5%To 95% Non-condensing
Dimension	97 mm× 55mm× 22 mm
Voltage	12V – 24V
Average Current When stand-by	<84mA

Installation

The installation of this product suggests to operate by professional technician, to ensure the tracker install properly

Package:

1） AT-12L GPS/ GSM Tracker x 1

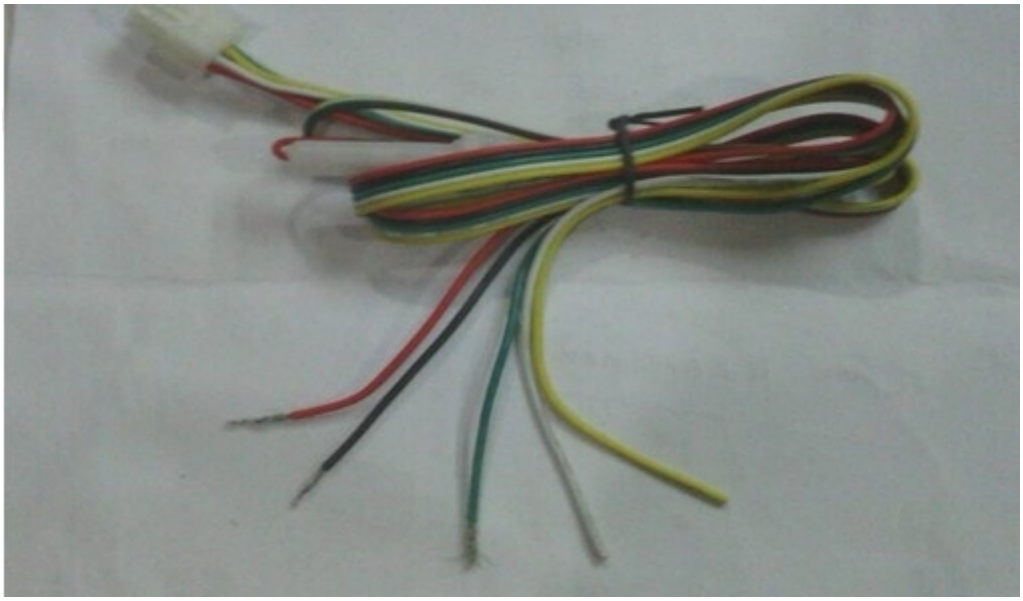
2） Power Cable (Fuse Protect) & Communicate Cable x 1

3) SOS Panic Button Cable x 1

4.) Build Inside Backup Battery x 1

5.) User Manual (CD) x 1

Power
GSM
GPS



PIN1 (red): 12V power wire of vehicle to connect positive electrode of vehicle battery;

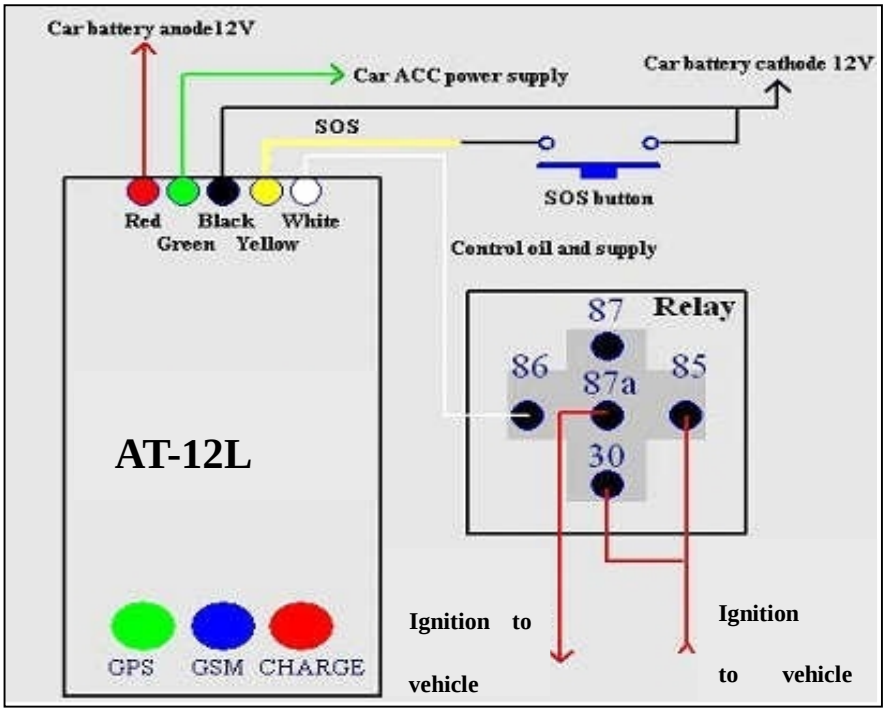
PIN2 (black): ground wire to connect negative electrode of vehicle battery;

PIN3 (green): ACC wire to supply power for car ACC;

PIN4 (white): control wire of fuel cutoff/power failure to connect relay;

PIN 5 (yellow): SOS wire to connect ground wire and trigger SOS

Wiring Diagram



Remove the back plate, insert SIM car into SIM slot. Make sure enough deposit in the SIM card and capable to use SMS/GPRS function. Suggest test with mobile phone in advance.

Wiring connections

Red - (+)12V -24V

Black – ground (-)

Yellow – SOS button (-) Connect other side of switch to ground (-)

White - engine immobilizer (-) (optional connection)

Green - ACC detect, stop battery charge while vehicle off.

LED Status

Blue LED--- GSM signal status

Status	Description
flash every 8s	GSM network stand by
flash every 1 sec	No GSM network or SIM card not detected

Red LED: Battery status

Status	Description
Constant light on	charging
Light off	Battery fully charge

Green LED: GPS signal status

Status	Description
Off	Not detect GPS signal
Blinding	Detected GPS signa

Quick start guideline

Tracking by SMS:

1. Put in SIM card and install device properly.
2. Set up controller phone number, send SMS command format *controller mobile phone number*0000*1** , For example *12345678*0000*1**. "12345678" is your phone number which use to send this command to tracker. “0000” is default user password, “1” is sequence of controller number.

* Device only accept others setting command from controller phone, make sure complete this step before start others setting.

3. Request location coordinate by SMS 6680000, click on the google map URL address, browser will pop out and show device location on Google map . Your phone must be GPRS enabled, otherwise please do SMS tracking on step 4.

4. Request location coordinate by SMS 6660000, the tracker reply SMS format with Longitude and Latitude. Key in the coordinate into Google map to view the location. For example, key in "+22.54619 +114.12378" , please be careful on the space between long and lat.

Tracking by GPRS on Web

1) Insert a GPRS enabled SIM card into tracker.
2) Set up controller phone number, send sms command format *controller mobile phone number*0000*1** , For example *12345678*0000*1**. "12345678" is your phone number which use to send this command to tracker. “0000” is defaulted user password, “1” is sequence of controller number.
3) Switch on GPRS connection by 7100000
4) Setup APN, command #803#0000#APN Name#User name#password##. For the APN without user name and password, use command #803#0000#APN Name##
5) Setup database IP address, command #804#0000#61.144.222.116#2332##
6) Setup user name, #801#0000#Your SIM Number (excluded country code)##
7) Setup upload interval while ACC ON, #805#0000#60#1##. It upload GPS data every 60 seconds.
8) Setup upload interval while ACC OFF, #809#0000#3600#1##. It upload GPS data every 1 hours (3600 seconds).
9) Log inhttp://61.144.222.116:8088/login.aspx with PC web browser .

* Enquire your sales representative for subscription

Setting in SMS mode

The device use SMS command to do configuration. It will reply related message once it get "instruction".

Controller phone number

Format: * controller phone number 4-20 figures * user password (4 figures) *Sequence number (1-3) **

eg: *13900000000*0000*1**

Explanation: Controller number use to manage the tracker, it is necessary to setup at least one controller number, maximum 3 number can be store. For the example above, first controller number become 139000000000

*** Device can accept setup command from any mobilephone, but the tracker will only take alarm to the controller phone .**

Switch tracker to SMS Mode

Format：700+ user password (4 figures)

eg: 7000000

Reply: SET MODE OK, CURRENT MODE: SMS P2P

Explanation：When AT-12L tracker receives the SMS and confirms the user password is correct, it switches to SMS application mode.

Change user password

Format: 777+new password (4 figures) +old password (4 figures)

eg: 77712340000

Reply: SET USER PASSWORD OK

Explanation: For the example above, change pre-setting password "0000" to new password "1234"

Power management

GPS can be set up to ON, OFF and Vibration sensor mode.

ON the GPS

Format: 222+user password (4 figures)

eg: 2220000

Reply: GPS ON OK

Explanation: When AT-12L tracker receives the instruction and confirms the user password correctly, switch on GPS module and keep the status

OFF GPS

Format: 333+ user password (4 figures)

eg: 3330000

Reply: GPS OFF OK

Explanation: When AT-12L tracker receives the instruction and confirms the user password correctly, off the GPS. Tracker will reply confirmation messages to the sender.

Power-saving mode

The AT-12L contains a vibration sensor for power management. When the vibration sensor function do not detect vehicle under movement for 5 minutes, GPS function will be automatically turned off to preserve vehicle battery life.

Once the vibration sensor is triggered, the AT-12L will re-start the GPS location function.

Format: 100+ user password (4 figures)

eg：1000000

Reply: VIBRATION SENSOR ON OK

Explanation: When AT-12L tracker receives the instruction and confirms the user password is correct, it will start power management by vibration sensor

Request location by SMS - show longitude and latitude

Format: 666+ user password (4 figures)

eg: 6660000

Reply: Location message as below

Data format:	**Sample Message:**
Lat: Latitude (+/-)	Lat:+22.54619
Long: Longitude (+/-)	Long: +114.12378
Speed: Speed KM/H	Speed: 0.00KM/H
Direction: Direction	Direction: 315.00
Date: Date YYYY-MM-DD	Date: 2008-04-25
Time: Time HH：MM：SS	Time: 16:39:45

BS: GSM Base Station information	BS: 25ee0dff
Fix: Location state (A/V)	Fix: A (A mean received GPS signal, V mean the low GPS signal, inaccurate position)
ID: IMEI	ID: 353686009002030
STATE: Tracker Status	STATE: SMS

While GPS does not detect satelite signal, it reply SMS as below:

Eg:

ERROR GPS GPRMC FRAME DATA BS:

27971054”

ID: 353686009002030

STATE: SMS

Request location by SMS - show Google map URL link

Format 1: 668+ user password (4 figures)

eg: 6680000

Format 2: 668+user password, WWW, HHH, ZZ

eg: 6680000,999,999,15

Description: 1. After the device receives instruction 1, it will read GPS information immediately and return Google map screenshot address of local position. Open the website to view position information.

Example of screenshot website is as follows:

http://maps.google.com/maps/api/staticmap?center=22.557118,114.100010&zoom=15&size=240x320&markers=22.557118,114.100010&sensor=true

2. Send instruction 2 to user-defining picture size. WWW stands for picture width, HHH stands for picture height and ZZ stands for zoom level (Note: WWW value and HHH value shall not exceed 1000 and ZZ value is recommended to be 1-

20).

3. Default size of screenshot is 240*320.

Format 3 : Instruction format: 669+user password

eg: 6690000

Description: When the device receives the instruction, it will read GPS information immediately and return Google map link of local position to the number. User can use PDA or smart phone to view local position on Google map.

Website example:

http://maps.google.com/maps?f=q&hl=en&q=22.554765,114.104716&ie=UTF8&z=16&iwloc=addr&om=1

Note: If the server cannot be connected after the above stated 3 instructions (667/668/669) are sent or due to other cause, the following messages will be returned.

1) If the server cannot be connected, it will return: SERVER BUSY, PLEASE TRY AGAIN LATER.

2) If GPS is not available, it will return GPS UNAVAILABLE, PLEASE TRY AGAIN LATER.

3) When you use Google map in China mainland, there may be deviation between the positioned position and the actual position in special cases.

Timer for SMS tracking

Activate timer tracking

Format: 4 xx + user password (4 figures)

eg: 4010000

Reply : TIMER START, REPEAT INTERVAK : X MINUTES

Explanation: The tracker could automatically report location message to controller phone for every X minutes. Reporting time either in minutes or hours. In the example, device will send coordinate message every 1 minute with "STATE:TIMER". Minimum value 1 minute and maximum 120 minutes

Stop timer tracking

Format: 400+user password

Reply: TIMER STOP

Instruction to report on time everyday

Instruction format: 665+user password+HHMM

eg: 66500001022

Close timing report: 665+user password+OFF

eg: 6650000OFF

Description: After receiving the instruction, the device will immediately return confirmation information: SET DAILY REPORT OK.

Note: 1. Using this instruction, the user may receive a piece of positioning information at a stated time, with its format as shown in “Single positioning request”.

2. HH stands for hour with defined range of [00, 23]. MM stands for minute with defined range of [00, 59].

Raise alert my SMS or phone call

Report by SMS

Format: 150 + user password (4 figures)

eg: 1500000

Reply: SET VOICE CALL: OFF

Explanation: Setup device raise alert (ie: Geofence, panic buton etc) by SMS only.

Report by voice call and SMS

Format: 151 + user password (4 figures)

eg: 1510000

Reply: SET VOICE CALL: ON

Explanation: Setup device raise alert by SMS and voice call. Please take note that voice call only for raising alert, just hang up after you get notice. The function was activated in pre-setting

Instruction for incoming call restriction switch

Instruction for incoming call restriction on: 170+user password

eg: 1700000

Instruction for incoming call restriction off: 171+user password

eg: 1710000

Description: After success to receive instruction for incoming call restriction on (170), AT-12L will return confirmation message: SET UNLIMITED MODE OFF OK. At this time, the device can only receive incoming call from 3 prestored numbers. Incoming call from non-prestored number will be hung up without other response.

After success to receive the instruction for incoming call restriction off (171), AT-12L will return confirmation message: SET UNLIMITED MODE ON OK. The device can answer incoming call from any cell phone.

Note: Default setting is incoming call restriction on.

Request location by voice call

Call the tracker with controller phone. After 2-5 rings, location message will be send to the controller phone with "STATE: SMS".

SOS button（Panic button)

When press the SOS button more than 3 seconds, it will send location information to controller phone number , the information included "STATE: SOS". By the way, it call the first controller phone number. If the call not success (mobile off, out of coverage or no response), start calling the second and so on.

Geo- Fence

Geo-fence – restricting area of permitted movement. You can restrict movement to within a certain area by setting up a ‘geo-fence’.

Setup Geo-fence area

A geo-fence is defined by the latitude and longitude base point of where it is and a permitted radius of travel from that point. If the vehicle travels outside this area the tracker will make a telephone call to the mobile phone that set the geo-fence as an alert. It will also send an SMS text including ‘STATE: OS’. While it return to Geo-fence area, it raise same alert with "State:RS". The tracker will repeat the above when the vehicle re-enters the geo-fenced area.

Command 1: Setup Geo-fence base point on certain Long and Lat.

Find the base point in google map, record the longitude and latitude

Now send the text command which includes the vehicles current location;

Format 1: 004+ user password E/Wddd.dddddN/Sdd.dddddRzzz.z

e.g: 0040000E11406.0024S2233.4230R1.0

Explanation: E-- east longitude (+) ; W-- west longitude (-); N-- north latitude (+); S-- south latitude (-). In this example, uses E and N, please according to the actual geographical position choose corresponding coordinate form to set.

Command 2: Take current location as Geo-fence base point

Format: 005+user password+Rzzz.z

E.g: 0050000R1.0

Reply: SET GEOFENCE OK

Explanation: In the example, it take current location as base point, radius 1.0km as geo-fence area

Turn On/Off Geo-fence alert

To turn the geo-fence on, send the text command: 211 (Function) + password

For example: 2110000

Reply: GEO-FENCE ON

Turn geo-fence off, send the text command: 210 (Function) + password

For example: 2100000

Reply: GEO-FENCE OFF

Once the tracker out of restricted area, it will send location SMS to controller phone, STATE: RS

Battery low voltage alert

While device detect internal battery is low power, it will send coordinate message with STATE:LP.

Immobilizer

Immobilize vehicle

a. Command format: 900 + user password

b. Confirm command format: 901 + user password

Description: When the tracker receive instruction of immobilize the car, it will reply message "Confirm Power OFF?".

Reply command 901 + user password to confirm the setting

Recover mobilization

a. Turn power back command: 902 + user password

b. Confirm the recovery command: 903 + user password

Description: When the tracker receive instruction of power back the , it will reply message "Confirm Power ON?". Reply command 903 + user password to confirm the setting.

Alert while power source being cuted off

Raise Alarm while power source being cut off

Command: 011 + user password

eg: 0110000

Reply: DEFENCE ON

Description: When power source from car battery being cuted off, call controller mobile phone and send location message with STATE: DEF.

Keep silent while power source being cut off

Command: 010+user password

eg: 0100000

Reply: DEFENCE OFF

Description: Not raise alert while power source being cuted off

Tow alarm

Turn on tow truck alert: 181 + user password

For example: 1810000

Turn off tow truck alert: 180 + user password

For example: 1800000

Description: After receiving the instruction, AT-12L will return confirmation message: **TOWED ALERT ON.** Now, tow truck alert function has been activated. When ACC is turned off, if it is detected that the device continuously vibrates for 20 seconds, the device will call the first prestored phone number. If it fails (the phone is turned off or cannot be connected), the second and the third phone number will be called in sequence. Finally, the device will send positioning information returned from “request for single positioning” to the prestored numbers. Information status is **STATE: TOWED.**

Note: 1. Default setting is tow truck alert on with vibration time of 20 seconds.

2. If the function is not needed, the user can send instruction 180 to turn off the function. If the function is not turned off, car vibration will trigger alert after parking.

Switch on/off ACC status prompt

Instruction to switch on ACC status prompt: 091 + user password

For example: 0910000

Instruction to switch off ACC status prompt: 090 + user password

For example: 0900000

Description: After receiving instruction 091 and confirming that user password is correct, AT-12L will send confirmation message to the sender “ACC STATE PROMPT: ON”. When ACC is being switched on/off, the device will send current position information to all prestored numbers immediately: “AUTO START/AUTO STOP”.

After receiving instruction 090 and confirming that user password is correct, AT-12L will send confirmation message to the sender “ACC STATE PROMPT: OFF”. When ACC is being switched on/off, AT-12L will not send any data information.

Note: Default setting is ON. This setting isn’t influenced by the device switch-off/on until change instruction or restoration operation is performed again.

ACC detection and movement warning

Instruction to set movement warning area: 008 + user password + Rzzz.z

For example: 0080000R100.0

Instruction to turn off movement warning: 009 + user password

For example: 0090000

After receiving instruction 008, AT-12L will return confirmation message: SET MOVE RADIUS OK. After receiving instruction 009, AT-12L will return confirmation message: MOVE DEFENCE:OFF.

Description: 1. zzz.z is mobile warning area radius, whose defined domain is [0.1, 999.9] with unit of KM.

2. After mobile warning area is set successfully, if AT-12L detects that ACC status is switched from on to off, the device will read current position information as origin of coordinates 3 minutes later. Whether GPS data is valid, the device will perform electronic area defence with zzz.z as radius.

While ACC is turned off, if AT-12L detects that the defence area is stepped beyond, it will send movement warning message to all prestored numbers in message mode. Information status is STATE: ACC OS (or upload current position information to the server in GPRS mode) and dial prestored number. (Whether to call is controlled by 150/151. After restoration, message is sent instead of calling).

When it enters defence area again after stepping beyond defence area, the device will also send message and call prestored phone (or upload position message in GPRS mode). Information status is ACC RS.

When AT-12L detects that ACC status is switched from off to on, movement warning function will be automatically cancelled. When ACC status is switched from on to off, movement warning function will be activated again.

Alert while engine ON or OFF

Activate engine ON or OFF alert

Format: 091+user password

Eg: 0910000

Reply: ACC STATE PROMPT:ON

Explanation: Device will send AUTO START to controller phone while engine being start up. While engine shut off, device will send message AUTO STOP.

Stop engine ON or OFF alert

Format: 090 + user password

Eg: 0900000

Reply: ACC STATE PROMPT:OFF

Explanation: Stop raise alert while engine ON or OFF

Mileage statistics function

Instruction to turn off mileage statistics

Instruction format: 140+user password

Eg: 1400000

Description: After receiving the instruction, AT-12L will return confirmation message: SET MILEAGE STATISTICS OFF OK. Mileage statistics function will remain in turnoff status.

Instruction to turn on mileage statistics

The instruction can be used to set the interval of timing report on total mileage.

Format: 141+PW

Description**:** After receiving the instruction, AT-12L will return confirmation message: SET MILEAGE STATISTICS ON OK. Mileage statistics function will be turn on.

Instruction to set initial mileage value (zero clearing)

Format: 142+PW

Description: After receiving the instruction, AT-12L will return confirmation message: MILEAGE STATISTICS RESET OK.

Instruction to read current mileage

Format: 143 + user password.

eg: 1430000

Description: After receiving the instruction and confirming that user password is correct, the device will read current total mileage value and return the following message to the number which sends the instruction: MILEAGE STATISTICS:ON，CURRENT TOTAL MILEAGE:XX (XX means current mileage value with unit of M).

Note: 1. If zero clearing is not performed, the mileage read is accumulated value;

2. Mileage statistics is off by default.

Instruction to change time zone setting

Instruction format: 896 + user password 4 digits + D + NN

For example: 8960000E08

Description: After receiving the instruction, AT-12L will return confirmation message: TIME ZONE SET OK,CURRENT：E8.

1. D takes E or W to indicate east or west time zone respectively. N takes a 2-digit number (1-12) to indicate time zone number.

2. After success to set 896000E08, all time-related data will be GPS time plus 8. After success to set 896000W07, all time-related data will be GPS time minus 7.

3. Default value is Greenwich time (UTC).

Note: When the instruction is set, data upload time in GPRS mode will not change. If the user wants to change data upload time, please refer to instruction 897 in GPRS mode in the next chapter.

Super Electricity-Saving Mode

Super electricity-saving mode means that position data upload is delayed when the car is driving; when no upload of data, it will enter Shutoff mode (close GPS and GSM modules) for the purpose of saving power and prolonging waiting call time.

1> Vibration control start instruction
Format: 121+passwork 4 digits
For example: 1210000
Description: AT-12L receives this instruction and then return confirmation message: OPEN VIB MODE. After entering the mode, the device judges whether it enters shutoff mode through vibration sensor. If it does not detect vibration within 5 minutes, the device will enter shutoff mode. If arriving at the set “shutoff mode upload interval”, the device will automatically start and upload the data and then enter again into shutoff mode.
Note: 1. In shutoff mode, if SOS alarm and power failure alarm, the device will immediately start and upload SOS/DEF status data, after upload, it will enter again into shutoff mode.
2. In shutoff mode, if detecting the external vibration, the device will start immediately and then work normally; if no vibration within 5 minutes, it will enter again into shutoff mode.
3. Default vibration control mode is ON.

2> Vibration control shutoff instruction
Format: 120+user password
For example: 1200000
Description: AT-12L receives this instruction and then return confirmation message: CLOSE VIB MODE. After entering the mode, the device judges whether it enters into shutoff status through ACC. If ACC is ON, the device will be in normal working mode; if ACC is OFF, it will enter into shutoff mode. If arriving at the set “shutoff mode upload interval”, the device will automatically start and upload the data and then enter again into shutoff mode.
Note: 1. In shutoff mode, if SOS alarm and power failure alarm, the device will immediately start and upload SOS/DEF status data, here, if ACC is ON, it will enter into normal working mode; if ACC is OFF, it will enter again into shutoff mode.
2. In shutoff mode, if detecting the external vibration, the device will start immediately; after woken up, it will work normally in the event that ACC is ON, and it will enter again into shutoff mode in the event that ACC is OOF.

Shut off mode upload interval setting instruction

Format: #819#user name#sampling interval X##
For example: #819#0000#10##
SUPER POWER-SAVE MODE DISABLED；
Description : X represents sampling interval scope with domain 【10，2000】and unit: minute.
If sampling interval is set as zero, the device will close super electricity saving mode and enters into normal working mode and return to the number sending such instruction such message as : SUPER POWER-SAVE MODE DISABLED；

If the sampling interval is set as other than zero, the device receives this instruction and then return the confirmation message as: GPRS REPORT SAMPLING 2 OK. After success to set the instruction, if the device enters into shutoff mode will start according to the set interval, and then it will send the message and enter again into shutoff mode after completing sending message.

GPRS Mode

In this mode, AT-12L will send location info to server through GPRS by a specific interval. Data transfer by TCP/I.P

Switch to GPRS mode

Format：710+ user password (4 figures)

eg：7100000

Reply: SET MODE OK, CURRENT MODE：GPRS

Explanation: When AT-12L tracker receives the SMS and confirms the user password is correct, device upload location and vehicle status by GPRS string.

Set up the access point name (APN)

Format1：#803#user password#APN##

eg：#803#0000#CMNET##

Format 2：#803#user password#APN#APN user name#APN password ##

Reply: SET GPRS ACCOUNT OK

Explanation: Setup APN with Format 1 while that is no APN user name and password require for your mobile network. Use Format 2 while you need input user name and password to connect APN

Note: APN become CMNET after factory reset. APN is characters composed by 3 to 35 alphabetic, numeric, dots (.) underscore (_) and connectors (-). APN user name and user password are respectively characters composed by 3 to 20 the numeric and alphabetic.

Set up TCP/IP server IP address and port number

Format：#804#user password#fixed IP address # port ##

eg：#804#0000#220.165.9.225#2332##

Or#804#0000#www.autoseeker.cn#2332#

Reply: SET SERVER IP AND PORT OK

Explanation: Setup server location for GPRS data transmission.

Start upload the location by GPRS

Format：#806#user password##

eg ： #806#0000##

Reply:START GPRS UPLOAD

Explanation: Start data transmission to server.

Data upload Interval

Data upload interval while ACC ON:

Format：#805#user password# T #N#

eg：#805#0000#30#2##

Reply: SET GPS SAMPLING TIME AND QUANTITY OK

Explanation: For the example above, when ACC ON, the tracker collect position data every 30 second , upload data to server every 2 data collected (1 minutes once). Data collection interval 'T' , minimum 10 seconds , maximum 59999 second. Data upload to server while N units of coordinate collected, minimum value is 1, maximum 50.

Upload interval while ACC Off:

Format：#809#user password# T#N ##

eg：#809#0000#1800#1##

Explanation: For the example above, when ACC OFF, the tracker collect position data every 1800 seconds , upload data to server every 1800 seconds (1 data collected). Data collection interval 'T' , minimum 10 seconds , maximum 59999 second. Data upload to server while N units of coordinate collected, minimum value is 1, maximum 50.

Data logger

Activate data logger function

Format: #807#user password#X##

Eg: #807#0000#5##

Reply: SET SAMPLING OK

Explanation: After receiving the instruction and confirming that user password is correct, AT-12Lwill set historical rewire sampling frequency as X. If X=0, the device will close historical data rewire. If X!=0, the device will take X seconds as interval to store received GPS data. After success, it will return confirmation message to the sender: SET SAMPLING OK.

Note: 1. X is historical rewire sampling frequency, whose defined domain is [0, 999] with second as unit.

2. Size of each data quantity is around 100B (BYTE).

3. Memory space distributed to historical data rewire is 864KB (BYTE) and stack override method is used to update data storage. If X=30, data for about 3 days will be rewired. If X=300, data for about 30 days will be rewired. When stored data reach 864KB, newly received data will override earlier data.

4. If power saving function is activated and AT-12Lremains static for a long time, historical rewire will be automatically closed until AT-12Lis wakened up and GPS is turned on.

Upload data to server

Format: #808#user password#Upload data for previous X hours##

Eg: #808#0000#24#

Reply: START UPLOAD 24H HISTORY RECORD

Explanation: Device start upload previous 24 hours data to server

Switch to upload invalid data

Instruction format: 08X + user password 4 digits

Function description: After receiving the instruction, AT-12L will be able to determine whether to upload invalid data in accordance with X value.

If X=1, the device will turn on the function of uploading invalid data. After success, the device will return confirmation message to the sender: INVALID DATA UPLOAD：ON. At this time, whether received GPS data are valid, they will be uploaded to the server.

If X=0, the device will turn off the function of uploading invalid data. After success, it will return confirmation message: INVALID DATA UPLOAD: OFF. At this time, invalid data upload will be turned off and only valid data will be uploaded.

Note: 1. Default setting is turning off invalid data upload.

2. The function is available for GPRS mode only.

Instruction to change time zone setting in GPRS mode

Instruction format: 897 + user password 4 digits + D + NN

For example: 8970000E08

Description: After receiving the instruction, AT-12L will return confirmation message: TIME ZONE SET OK,CURRENT：DN（For example: TIME ZONE SET OK,CURRENT：E8）.

Note 1. D takes E or W to indicate east or west time zone. NN takes a 2-digit number (1-12) to indicate time zone number.

2. If success to set 8970000E08, GPRS data uploads time will be GPS time plus 8. If successes to set 8970000W07, GPRS data upload time will be GPS time minus 7.

3. Default value is Greenwich time (UTC).

4. The instruction is available for data upload in GPRS mode only.

Upgrade device by GPRS

Format: !-user password

Reply: None

Explanation: Device connect to Udrivetec FTP server and upgrade latest firmware

Eg: !-0000

Appendix: Command List

Command	Sample	Description	Reply
*controller phone number 4-20 figures * user password (4 figures) *Sequence number (1-3) **	*13900000000*0000*1**	Set controller phonr number	SET USER NUMBER 1 OK
700+Password	7000000	Start SMS tracking mode	SET MODE OK, CURRENT MODE: SMS P2P
710+Password	7100000	Start GPRS tracking mode	SET MODE OK , CURRENT MODE : GPRS
004+PasswordE/Waaa.aaaaaN/Sbb.bbbbb Rzzz.z	0040000E11406.0024S2233.4230R1.0	Set geo-fence base point	SET GEOFENCE OK
005+PasswordRzzz.z	0050000R1.0	Set current location as geofence base point	SET GEOFENCE OK
010+Password	0100000	Not raise alert while power source being cutted off	DEFENCE OFF
011+Password	0110000	Raise alert while power source being cutted off	DEFENCE ON
100+Password	1000000	Power saving mode	VIBRATION SENSOR ON OK
150+Password	1500000	Raise alert by SMS	SET VOICE CALL: OFF
151+Password	1510000	Raise alert by voice call and SMS	SET VOICE CALL: ON

210+Password	2100000	Off geo-fence alert	GEO-FENCE OFF
211+Password	2110000	On geo-fence alert	GEO-FENCE ON

222+Password	2220000	On GPS receiver	GPS ON OK
333+Password	3330000	Off GPS receiver	GPS OFF OK
4xx+Password	4010000	Timer for SMS tracking	TIMER START, REPEAT INTERVAK : X MINUTES
666+Password	6660000	Request location by SMS	Coordinate message
668 +Password	6680000	Request location by SMS with Google Map Link	Coordinate message
777+New Password+Old Password	77712340000	Change Password	SET USER PASSWORD OK
900+Password	9000000	Immobilzize vehicle	Confirm Power OFF?
901+Password	9010000	Confirm immobilization	POWER OFF OK
902+Password	9020000	Recover mobilization	Confirm Power ON?
903+Password	9030000	Confirm recover mobilization	POWER ON OK
008+Paswword+Rzzz.z	0080000R1.0	Active tow alarm radius range 100 km	SET MOVE RADIUS OK
009+password	0090000	Cancel tow alarm	MOVE DEFENGCE:OFF
091+password	0910000	Raise alert while ACC ON/OFF	ACC STATE PROMPT:ON
090+password	0900000	Stop alert while ACC ON/OFF	ACC STATE PROMPT:OFF
#807#password#X##	#807#0000#10##	Start data logger function, record location message every x seconds	SET SAMPLING OK
#808#0000#**X**##	#808#0000#24##	Upload data in data logger to server	START UPLOAD **X**H HISTORY RECORD
#803#Password#APN##	#803#0000#internet##	Set APN	SET GPRS ACCOUNT OK

#803#Password#APN#APN	#803#0000#internet#guest	Set APN user name	SET GPRS ACCOUNT OK

username#APN pssword##	#guest##		
#804#Password#server's IP#port##	#804#0000#220.165.9.225 #2332##	Set GPRS tracking sever's IP and port	SET SERVER IP AND PORT OK
#805#Password#Save GPS data every ‘‘ T’’ seconds#Upload data to server after "N" units message saved##	#805#0000#30#2##	Interval of GPS data upload to server while engine started	SET GPS SAMPLING TIME AND QUANTITY OK
#806#Password##	#806#0000##	Start upload GPRS data	START GPRS UPLOAD
#809#Password#Save GPS data every ‘‘ T’’ seconds#Upload data to sercer after	#809#0000#1800#1##	Interval of GPS data upload to server while engine stopped	GPRS REPORT SAMPLING 2 STOP
*RESET#password##。	*RESET#0000##	Reset to default setting	
*RESTART#password##	*RESTART#0000##	Restart device	
*GTAS#	*GTAS#	Read all setting	Setup details